

**AMENDMENTS TO THE DRAWINGS**

Replacement Figure 1(G).

Attachment: Replacement Sheet(s)

### **REMARKS**

Claims 1-122 are all the claims pending in the application. Claims 1-47 are rejected. Claims 1-6, 9-11, 13-1726-29, 32, 41, 42 and 44-47 are amended. Claims 48-122 are withdrawn from consideration, and have been cancelled. New claim 123 has been added.

### ***Drawings***

The Examiner objects to the drawings under 37 CFR 1.83(a) because they do not show the structure in claim 6 (a channel) and the structure in claim 35 (both the semiconductor layer and the dielectric layer are patterned so as to form an active layer island of the device).

As to claim 6, many of the original Figures already show “a ridge wherein the ridge has a width that defines a length of a channel of the electronic device.” For example, Figure 5A shows a ridge (labelled 43) which defines a channel in between the electrodes (labelled 44 and 45) in a semiconductor material (labelled as 46).

As to claim 35, Applicants are submitting a revised first sheet that includes a new Figure 1G that shows the semiconductor layer 11 patterned into an active layer island. Note, this simply involves deleting side portions of layers 11 and 12, as would be understood by those skilled in the art. In addition, the specification has been amended at pages 4 and 7 to refer to the new Figure 1G.

### ***Claim Rejections - 35 U.S.C. 112***

**Claims 2-11, 13-21, 26-35, 38, 39, 42 and 44-46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite.** This rejection is traversed for at least the following reasons.

The Examiner has identified typographical errors or grammatical errors in each of claims 11, 13, 26 and 32. Applicants have amended the claims to correct these errors.

The Examiner asserts that there is insufficient antecedent basis for certain claim language in claims 2-6, 9, 13-17, 27-29, 41, 42 and 44.

**Claims 1, 2, 6-8, 11, 27, 30, 31, 36-38, 40 and 43-47 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by Bernds (WO0247183).**

**Claim 1**

Claim 1 has been amended on the basis of Figures 1A-1G of the current application and the associated written description at sections [0026] and [0027] of the US publication for this application. In particular, the verb “confine” is used at the first line of section [0027].

Thus, the claim now requires applying a solution of a conductive or semiconductive material onto the substrate so as to confine in a single step the deposition of said conductive or semiconductive material to said first and second regions, whereby the conductive or semiconductive material forms (1) a first electrode on the first region and (2) a second electrode on the second region, wherein the first and second electrodes are (3) electrically insulated from each other by the third region.

The prior art does not teach the single step deposition of material on two regions to form two electrodes on different regions, which are electrically insulated from each other.

**Bernds**

Applicants respectfully submit that the Examiner makes particular reference to paragraphs 2, 4-18 and 20-28 of US2004/0063267 in framing the rejection. However, Applicants could find no disclosure at these sections of a technique of amended claim 1. Applicants’ understanding of Figure 1.4 and section [0027] of US2004/0063267 is that it illustrates a technique in which a functional polymer 8 is deposited in the recesses 12 by a two-step process, including a second step in which the excess material is removed by means of a doctor blade 9. This is not the subject matter of the one-step process, as claimed.

**Claims 2, 6-8, 11, 27, 30, 31, 36-38, 40 and 43-47**

These claims would be patentable at least for the reasons given for parent claim 1.

**Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berndt as applied to claim 2, and further in combination with Heidari (WO0190816).** This rejection is traversed for at least the following reasons.

The Examiner asserts that Berndt discloses the features of claims 3 and 4, but admits that Berndt does not appear to explicitly disclose “the width of the protruding portion widens from the sharp protruding tip, towards the embossing surface of the tool,” as recited in claim 3 and

“the width of the recessed portion widens from the recessed point, towards the embossing surface of the tool,” as recited in claim 4.

**Heidari**

The Examiner looks to Heidari for a teaching that “the width of the protruding portion 3c/8 widens from the sharp protruding tip, towards the embossing surface of the tool 1, 3c/8; the recessed portion (between each 3c/8) widens from the recessed point, towards the embossing surface of the tool.” The Examiner also notes that Heidari also discloses sharp tips 3c.

However, Applicants respectfully submit that the deficiencies in Bernds with respect to the features of claim 1, are not remedied by Heidari, as it is cited solely for teachings related to claims 3 and 4. Thus, the present claims are patentable at least by virtue of their dependency from claim 1.

**Claims 5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bernds as applied to claim 1, and further in combination with Ostergard (20030230747).** This rejection is traversed for at least the following reasons.

The Examiner asserts that Bernds discloses the features of claims 5 and 12, but admits that Bernds does not appear to explicitly disclose “the substrate comprises a substrate coated with a polymer layer 2,” as recited in claim 5 and a “rigid substrate,” as recited in claim 12.

**Ostergard**

The Examiner looks to Ostergard at paragraphs 5, 6, 11, 13, 19, 44, 45, 51 for such teachings and a substrate surface treatment as well as a teaching that a “flexible” and “rigid” substrate are alternatives and equivalents.

However, Applicants respectfully submit that the deficiencies in Bernds with respect to the features of claim 1, are not remedied by Ostergard, as it is cited solely for teachings related to claims 5 and 12. Thus, the present claims are patentable at least by virtue of their dependency from claim 1.

**Claims 24, 28, 32 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bernds as applied to claim 30, and further in combination with Ong (20030164495).** This rejection is traversed for at least the following reasons.

The Examiner asserts that Bernds discloses several features of claims 24, 28, 32 and 39, but admits that Bernds does not appear to explicitly disclose “the conductive polymer is polyethylenedioxythiophene doped with polystyrene sulfonic acid (PEDOT/PSS),” as recited in claim 24, “wherein said semiconductive material is regioregular poly(3-hexylthiophene) (P3HT) or poly(dioctylfluorene-cobithiophene) (F8T2),” as recited in claim 28, “wherein the polymer layer is poly(methylmethacrylate) (PMMA),” as recited in claim 32, and “the step of depositing a gate electrode onto the surface of the gate dielectric layer,” as recited in claim 39.

**Ong**

The Examiner looks to Ong for a disclosure at paragraphs 8-27, 33-36 and 47 that “a conductive polymer is polyethylenedioxythiophene doped with polystyrene sulfonic acid (PEDOT/PSS) “polystyrene sulfonate-doped poly(3,4-ethylenedioxythiophene)”; wherein a semiconductive material is regioregular poly(3-hexylthiophene) (“P3HT”); wherein a polymer layer is poly(methylmethacrylate) (PMMA) “poly(methacrylate)”.

However, Applicants respectfully submit that the deficiencies in Bernds with respect to the features of claim 1, are not remedied by Ong, as it is cited solely for teachings related to claims 24, 28, 32 and 39. Thus, the present claims are patentable at least by virtue of their dependency from claim 1.

**Claims 9, 10, 22, 23, 25, 29 and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bernds as applied to claim 27, and further in combination with Bulthaup (20030082485).** This rejection is traversed for at least the following reasons.

The Examiner asserts that Bernds discloses several features of claims 9, 10, 22, 23, 25, 29 and 33-35, but admits that Bernds does not appear to explicitly disclose “embossing” performed at a temperature within 50 °C of the glass transition temperature of the topmost surface of the substrate,” as recited in claim 9, “embossing” performed at a temperature at which the topmost surface of the substrate is in a liquid phase, as recited in claim 10, use of a “solution of conductive or semiconductive material comprises a conductive ink,” as recited in claim 22, “wherein the conductive ink comprises a conductive polymer,” as recited in claim 23, “wherein the conductive ink comprises a conductive inorganic dispersion of electrically conductive

nanoparticles,” as recited in claim 25, “wherein said semiconductive material is an inorganic nanoparticulate or an inorganic nanowire semiconductor,” as recited in claim 29,

**Bulthaup**

The Examiner looks to Bulthaup at paragraphs 8, 30, 32-35 and 45, for a disclosure of embossing and asserts that the claimed process features are “inherent,” and asserts that the teachings of semiconductors as an inorganic nanoparticulate leads to the limitations related to nanoparticles. Finally, the Examiner finds in the two references the subject matter of claims 33-35.

However, Applicants respectfully submit that the deficiencies in Bernds with respect to the features of claim 1, are not remedied by Bulthaup as it is cited solely for teachings related to claims 9, 10, 22, 23, 25, 29 and 33-35. Thus, the present claims are patentable at least by virtue of their dependency from claim 1.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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